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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/047,627      | 01/14/2002  | Satoshi Yamamoto     | 113197-020          | 4034             |

24573 7590 10/04/2002

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| EXAMINER |
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FERGUSON, MARISSA L

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| ART UNIT | PAPER NUMBER |
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2855

DATE MAILED: 10/04/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/047,627

Applicant(s)

YAMAMOTO ET AL.

Examiner

Marissa L Ferguson

Art Unit

2855

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) 2,3 and 5-7 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 4 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

**DETAILED ACTION**

***Election/Restrictions***

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1 and 4 are drawn to pressure sensor, classified in class 73, subclass 754.
- II. Claims 2,3, and 5-7 are drawn to a method of manufacturing a pressure sensor, classified in class 438, subclass 53.

The inventions are distinct, each from the other because of the following reasons:

Inventions of Group I and II are related as process of making and product made.

The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case manufacturing a pressure sensor by doping.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

During a telephone conversation with Michael Leonard on September 27,2002 a provisional election was made without traverse to prosecute the invention of Group I, claims 1 and 4. Affirmation of this election must be made by applicant in replying to this Office action. Claims 2,3, and 5-7 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 and 4 are rejected under 35 U.S. C. 103(a) as being unpatentable over Ko (U.S. Patent 5,528,452) in view Okada (U.S. Pub. 2002/0014126 A1).

Ko teaches the invention as claimed: a pressure sensor comprising a silicon structure having a conductive diaphragm (3), the silicon substrate bonded on a substrate, which comprises an electrode covered by a dielectric film (2), so that the diaphragm and the electrode are facing each other and there is a gap between the diaphragm and the dielectric film, the pressure sensor measuring a pressure applied thereto by detecting capacitance according to the area of a contact face of the diaphragm which touches the dielectric film when the pressure is applied and the silicon structure having a conductive diaphragm, provided by doping of an impurity and anisotropic etching (Admitted disclosure of Description of Related Art, Page 1 and Page 2). However, he does not explicitly disclose the concentration of an impurity at the top face of the diaphragm being equal to or greater than  $1 \times 10^{19} \text{ cm}^{-3}$  and less than  $9 \times 10^{19} \text{ cm}^{-3}$ .

Okada discloses the concentration of an impurity at the top face of the diaphragm being equal to or greater than  $1 \times 10^{19} \text{ cm}^{-3}$  and less than  $9 \times 10^{19} \text{ cm}^{-3}$  (Page 8, [0150]).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the invention taught by Ko to include the concentration of an impurity as taught by Okada, for the purpose of positioning electrodes internally on a top surface.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marissa L Ferguson whose telephone number is (703) 305-3194. The examiner can normally be reached on (M-T) 6:30am-4:00pm and every other (F) 7:30am-4:00.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Benjamin R Fuller can be reached on (703) 308-0079. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.

Marissa L Ferguson  
Examiner  
Art Unit 2855

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October 1, 2002

  
William Oen  
Primary Examiner